In the Claims:

Please amend the claims as follows:

1-41 (cancelled)

42. (new) A high voltage AC transmission cable system for transmitting power between two points each connected to one or more power networks, comprising:

at least one AC transmission cable;

at least one transformer arranged at each end of the at least one AC transmission cable;

a voltage control member operatively connected to the at least one said transformer and operative to operate the transformer at a voltage whereby losses due to reactive power transport are minimized.

43. (new) The system according to claim 42, further comprising:

a control member to operate said system at an optimal voltage dependent on a surge impedance of the cable and an instantaneous power level.

44. (new) The system according to claim 42, further comprising:

a control member operative to operate said system at an optimal voltage dependent on an instantaneous power level equal to a Natural Load of the cable.

45. (new) The system according to claim 42, further comprising:

a control member operative to operate said system at a voltage whereby a sum of resistive losses, dielectric losses and charging losses are minimized.

46. (new) The system according to claim 42, wherein the control member is arranged for communication with control equipment at both ends of said AC transmission cable.

47. (new) The system according to claim 42, wherein the control member is arranged with control instructions for operation of said AC transmission cable under thermal overload conditions during limited periods of time.

48. (new) The system according to claim 42, wherein the at least one transformer is arranged to operate with a wide ratio of input voltage to output voltage of between 1: 1 to 1: 2, or greater.

49. (new) The system according to claim 42, further comprising:

a tap-changer operative connected to the voltage control member.

50. (new) The system according to claim 42, wherein the voltage control member comprises a power electronic device which may be any of the list of: IGBT, IGCT, GTO, Thyristor, Diode.

51. (new) The system according to claim 42, wherein the voltage control member comprises a mechanical tap-changer.

52. (new) The system according to claim 51, wherein the tap-changer comprises a phase-shifting tap changer.

53. (new) The system according to claim 42, wherein the voltage control member is comprised in an autotransformer.

54. (new) The system according to claim 42, wherein the voltage control member is an autotransformer.

55. (new) The system according to claim 42, wherein the at least one transformer is arranged to limit short-circuit currents.

56. (new) The system according to claim 42, wherein the system is equipped with a high frequency filter.

57. (new) The system according to claim 42, wherein transformer windings of the at least one transformer comprise at least one transformer winding arranged for a fast short-circuit of a part of the transformer windings.

58. (new) The system according to claim 42, further comprising:

one or more parallel cables for each phase, wherein each cable is arranged for rapid disconnect and reconnect.

59. (new) The system according to claim 58, further comprising:

one or more breakers arranged for rapid disconnect and reconnect.

60. (new) The system according to claim 58, further comprising:

one or more tap changer by-pass connectors.

61. (new) The system according to claim 42, wherein the at least one AC transmission cable comprise an oil and paper insulated cable.

62. (new) The system according to claim 42, wherein the at least one AC transmission cable comprises an XLPE insulated cable.

63. (new) The system according to claim 42, further comprising:

one or more over-voltage protection devices, phase-to-phase, phase-to-earth, depending on the cable.

64. (new) The system according to claim 42, further comprising:

one or more elements operative to protect a sheath of the at least one cable from overvoltage.

65. (new) The system according to claim 42, further comprising:

a cable system shield comprising transposings and sheath sectionalizing insulators

reducing shield induced currents.

66. (new) The system according to claim 42, wherein one end of the transmission cable may be connected to one or more electrical machines isolated from the rest of the system.

67. (new) The system according to claim 66, wherein one of the at least one transformer arranged nearest the one or more electrical machines has a fixed transformation ratio or is equipped with off-load tap-changers only.

68. (new) The system according to claim 66, wherein voltage regulation of the one or more electrical machines is controlled according to natural load and minimize losses principle applied to a tap changer.

69. (new) A method to control a high voltage AC transmission cable system for transmitting power between two points connected to one or more power networks, the method comprising:

arranging at least one transformer arranged at each end of an AC transmission cable; and

operating the cable with a variable voltage that may differ from a voltage of said one or more power networks.

70. (new) The method according to claim 69, further comprising:

regulating the voltage dependant on a function of a natural load of said AC transmission cable, and thereby controlling a level of reactive power transported into any of said one or more

power networks.

71. (new) The method according to claim 70, wherein the voltage is regulated dependent on the natural load, whereby losses at due to resistive, dielectric effects are minimized.

72. (new) The method according to claim 71, wherein the voltage is regulated under no-load conditions such that losses are reduced while maintaining voltage above a lower, minimum voltage level depending on system conditions.

73. (new) The method according to claim 71, wherein the voltage is regulated under low load conditions such that losses are reduced while maintaining voltage above a lower, minimum voltage level depending on system conditions.

74. (new) The method according to claim 69, further comprising:

regulating the voltage dependent in part on an equation of the form:

$v = \sqrt{Z \cdot P_{actual}}$

where V is voltage, Zv is the real part of the surge impedance and Pactual is the present active power flow.

75. (new) The method according to claim 69, further comprising:

regulating the voltage dependent on thermal overload limits for the transmission cable during limited periods of time.

76. (new) The method according to claim 69, further comprising:

rapidly reconnecting and disconnecting supply to and from at least two transmission cables.

77. (new) The method according to claim 69, further comprising:

regulating the voltage with more than one transformer that are operated synchronously with each other.

78. (new) Use of a high voltage AC transmission cable system for transmitting power between two points according to claim 42 as a power feeder for large, densely populated urban or suburban areas.

79. (new) Use of a high voltage AC transmission cable system for transmitting power over a distance between two points according to claim 42 in which a part of the distance is across water.

80. (new) Use of a high voltage AC transmission cable system for transmitting power between two points according to claim 42 wherein one point comprises one or more electrical machines isolated from an electrical power network.

81. (new) A system for communication and control for a high voltage AC transmission cable system for transmitting power between two points connected to one or more power networks wherein high speed data communication members are arranged for communication

with control equipment for at least one transformer arranged at at least one end of an AC transmission cable.

82. (new) A graphical user interface for controlling a high voltage AC transmission cable system for transmitting power between two points connected to one or more power networks, wherein at least one transformer is arranged at each end of an AC transmission cable, the interface comprising:

at least one object oriented application for presenting data, parameter values and control actions for operating parameters of the AC transmission cable system and/or a control system for at least one transformer.

83. (new) A high voltage AC transmission cable system for transmitting power between two points each connected to one or more power networks wherein at least one transformer is arranged at each end of an AC transmission cable, the system comprising:

at least one said transformer; and

a voltage control member operative to operate the at least one transformer at a voltage dependent on the surge impedance of the cable whereby losses due to reactive power transport are minimized.

84. (new) The system according to claim 83, further comprising:

a control member operative to operate said system at an optimal voltage dependent on the surge impedance of the cable and the instantaneous power level.

85. (new) The system according to claim 83, further comprising:

a control member operative to operate said system, at an optimal voltage dependent on an instantaneous power level equal to the Natural Load of the cable.

86. (new) The system according to claim 83, further comprising:

a control member operative to operate said system at a voltage whereby the sum of the resistive losses, dielectric losses and charging losses are minimized.

87. (new) The system according to claim 83, wherein the control member is arranged for communication with control equipment at both ends of said AC transmission cable.

88. (new) The system according to claim 83, wherein the control member is arranged with control instructions for operation of said AC transmission cable under thermal overload conditions during limited periods of time.

89. (new) The system according to claim 83, further comprising:

a cable system shield comprising transposings and sheath sectionalizing insulators reducing shield induced currents.

90. (new) The system according to claim 83, wherein one end of the transmission cable may be connected to one or more electrical machines isolated from the rest of the system.

91. (new) The system according to claim 90, wherein one of the at least one transformer

arranged nearest the one or more electrical machines has a fixed transformation ratio or is equipped with off-load tap-changers only.

92. (new) A method to control a high voltage AC transmission cable system for transmitting power between two points connected to one or more power networks, the method comprising:

arranging at least one transformer arranged at each end of an AC transmission cable; and

operating the cable with a variable voltage dependent on a surge of impedance of the transmission cable, which may differ from a voltage of said one or more power networks.

93. (new) The method according to claim 92, further comprising:

regulating the voltage dependant on a function of a natural load of said AC transmission cable, and thereby controlling a level of reactive power transported into any of said one or more power networks.